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ABSTRACT

This report discusses how reading instruction should be modified to facilitate the development of comprehension strategies in all children (including those labeled as "at-risk" or "disadvantaged"). Current theoretical views of reading comprehension do not support a discrete skills perspective, but classroom research has documented the influence of basal reading programs on elementary reading instruction. Current views of reading suggest that readers are involved in a recursive search for meaning in which they deploy their own knowledge in concert with perceptions from the text and context to create a dynamic interpretation. In the search for an appropriate instructional model, four delivery models were reviewed: direct instruction, explicit instruction, cognitive apprenticeship, and whole language; none, however, were found capable of providing the appropriate delivery system for a comprehension focus. Based on this review, a consensus model of instruction, incorporating features of each model that are appropriate for designing instruction for low-achieving students, is delineated. It includes (1) teacher modeling, to let students in on the secrets; (2) task and text authenticity, to ensure purposefulness; (3) scaffolding, to cope with complexity; and (4) shared decision making, to develop self assessment. This approach to reading instruction requires teachers to move away from the "teacher-proof" model frequently offered in conventional programs to a model in which they make most decisions within their classrooms. (A list of 121 references is attached.) (Author/RS)

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CENTER FOR THE STUDY OF READING

Technical Report No. 489

MODIFYING READING INSTRUCTION TO MAXIMIZE ITS EFFECTIVENESS FOR ALL STUDENTS

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Abstract

This report discusses how reading instruction should be modified to facilitate the development of comprehension strategies in *all* children. With a focus on low-achieving students, the current instructional situation is reviewed. Then, the theoretical rationale for a comprehension focus is presented. The content of a comprehension-based curriculum is defined, and suggestions for teacher implementation are given. In the search for an appropriate instructional model, four delivery models are reviewed: direct instruction, explicit instruction, cognitive apprenticeship, and whole language. Based on this review, a new instructional model is delineated. This model aims for student control and includes teacher modeling (to let students in on the secrets), task and text authenticity (to ensure purposefulness), scaffolding (to cope with complexity), and shared decision making (to develop self-assessment). Throughout the discussion, issues are identified that are relevant to the reading performance of children who frequently have been labeled "at-risk" or "disadvantaged."

MODIFYING READING INSTRUCTION TO MAXIMIZE ITS EFFECTIVENESS FOR *ALL* STUDENTS

We think that reading instruction for all children--including those who have been labeled "at-risk" or "disadvantaged"--should be designed to facilitate the development of comprehension strategies. While we do not want to underestimate the importance of acquiring decoding skills as a part of a repertoire of reading strategies, we do want to make clear our dissatisfaction with stage models of reading (where students first learn to decode and then learn to comprehend), and our commitment to a focus on comprehension from the outset of schooling. We think that it is important for *all* students to understand that the main purpose of reading is to construct meaning. Data from the National Assessment of Educational Progress (Applebee, Langer, & Mullis, 1987) suggest that we have done a fairly good job of teaching children how to decode text. In fact, most children and young adults who participated in the assessment were able to decode and comprehend simple text. On the other hand, only small percentages of them were able to reason about what they read and wrote. Even more alarming was the finding that black and Hispanic children performed considerably poorer than their Anglo counterparts as early as fourth grade (Applebee et al.), a time when most children are expected to begin learning from text (Chall, 1983). It is with these findings in mind, along with our knowledge about the current instructional situation and current view of reading, that we recommend that all children--regardless of their level of skills mastery, dialect, or first language--receive reading instruction that will foster and promote the development of comprehension strategies.

In this report, we briefly describe the type of reading instruction that all too frequently is provided to low-achieving students in American schools. We discuss why a comprehension focus--more specifically a focus on the development of comprehension strategies--is important and how it is different from much currently available instruction. Then we suggest strategies that need to be developed and, in the search for an appropriate instructional model, review four delivery models: direct instruction, explicit instruction, cognitive apprenticeships, and whole language. Finally, based on this review, we delineate a new instructional model that we think will help to promote comprehension strategies. Within this framework, we identify issues that are especially relevant to the teaching and learning of children who frequently have been labeled "at-risk" or "disadvantaged."

The Current Situation

Classroom research has documented the influence of basal reading programs on elementary reading instruction (Durkin, 1978-79; Fisher, Berliner, Filby, Marliave, Cohen, Dishaw, & Moore, 1978; Hatch & Bondy, 1984; Mason & Osborn, 1982). A common characteristic of most basal programs is that they attempt to reduce the complexity of learning to read by decomposing the "process" into a series of discrete and isolated skills. Although children may become proficient at performing these discrete tasks, they may not become proficient readers. In fact, one reason that children without extensive exposure to print prior to formal schooling may fail at reading is that the instructional focus on discrete tasks does not foster an understanding of what reading is all about (see Teale & Sulzby, 1986).

Current theoretical views of reading comprehension do not support a discrete skills perspective. The discrete skills assumptions of current basal programs hearken back to theoretical positions characteristic of the task analytic (see Gagne, 1965) and mastery learning (see Bloom, 1968; Carroll, 1963) traditions of the 1960s (see Pearson & Raphael, in press, or Pearson, Dole, Duffy, & Roehler, in press, for discussions of this movement). Even though the most recent entries into the basal market differ substantially from their predecessors, vestiges of the task analytic and mastery learning traditions are still seen in the pretests and posttests that dictate when an individual student is to study a particular skill, receive more practice, or move on to another skill or set of skills.

In such systems some students, particularly low achievers, never reach the skills at the higher end of the continuum because their teachers continue to have them work on unmastered "basic" skills at the lower end. Or, as Stanovich's (1986) "Matthew" effect has been colloquially interpreted, "them that has, gits." Dreeben's (1987) research, in particular, has revealed that the differential performance of black children as compared to white children frequently is determined by the amount of time spent on reading, the

richness of the curricular material covered, and the appropriate matching of instruction to the ability level of the children.

It also is not uncommon for low-achieving students to receive reading instruction where the emphasis is on decoding at the expense of comprehension (Allington, 1983; Garcia, Jimenez, & Pearson, 1989). J. Collins (1982) documented this finding in a study in a first-grade integrated classroom in California and in a third-grade black classroom in Chicago. In both classrooms, children in the low groups received far less instruction and practice in reading comprehension than did those in the high groups. Moll, Estrada, Diaz, and Lopes (1980) discovered similar findings when they compared the reading instruction given to Spanish-English bilingual children in both Spanish and English. However, in this case, even children who were in the high and middle Spanish reading groups did not receive much comprehension instruction in their English reading classes. Instead, their English teachers emphasized decoding activities because they misinterpreted the children's nonnative English pronunciation as a symptom of decoding problems.

Many teachers tend to delay or de-emphasize comprehension instruction for language-minority children because they misinterpret the children's less-than-fluent oral reading of standard English as evidence that they are not ready to understand text. Despite strong warnings, based upon considerable sociolinguistic research, that they should not interpret a nonstandard dialect as a language deficit (Goodman, Watson, & Burke, 1987; Torrey, 1983; Troutman & Falk, 1982), some teachers still misinterpret black children's use of Black English Vernacular as evidence of a decoding problem (Burke, Pflaum, & Krafle, 1982; Cunningham, 1976-77).

Ironically, what little evidence we have about intervention programs for low-achieving primary-level first- and second-language readers demonstrates that increased access to a wide range of reading materials, in comparison to conventional programs, improves performance on both comprehension and decoding tasks (Elley & Mangubhai, 1983; Feitelson, & Goldstein, 1986). On the other hand, attempts to improve the comprehension of poor readers in the upper primary grades through extensive decoding training have had mixed results. Blanchard (1980) reported improved literal and inferential comprehension performance for a sample of sixth-grade poor readers as a consequence of pre-teaching them to read all the words that were in the experimental passages. However, in a study with fourth- and fifth-grade poor readers, Fleisher, Jenkins, and Pany (1979-80) found that while explicit decoding training improved the children's passage decoding, it did not improve their passage comprehension. A major limitation of these studies is that they involve teaching poor readers how to decode every new word that they encounter, a rather prohibitive task that contradicts our current knowledge about the generative nature of language acquisition and literacy. Such studies also do not present children with the type of exposure to print that they need to begin to understand the functions and features of written language and to move from cognitive confusion about written language to cognitive clarity (Downing, 1976, 1986).

The Comprehension Focus

Current views of reading, variously termed interactive, strategic, schema-theoretic, or social-cognitive, suggest that quality reading instruction for all children should focus on the development of comprehension strategies from the outset of schooling. Based on empirical research in cognitive psychology and the psychology of language, these views suggest that readers are involved in a recursive search for meaning.

Throughout this search, readers deploy their own *knowledge* in concert with perceptions from the *text* and *context* to create a dynamic interpretation. Each of these influences is multidimensional. Factors within the *reader* include knowledge of the topic, reading skills, and reasoning strategies. Factors within the *text* include remnants of the author's biases, goals, and intentions (see Winograd & Bridge, 1986), as well as structural characteristics, graphic characteristics, and adjunct aids. Factors within the *context* include the environment in which we read or learn to read; cultural values that reflect our ethnic, religious, and national identities; and specific purposes we develop for particular tasks.

Although contextual factors typically have not been highlighted as sources of influence in the reading process, findings from cross-cultural studies have indicated that beliefs affect not only how we determine levels of importance, but also how we group information into categories (Lipson, 1983; Reynolds, Taylor,

Steffensen, Shirey, & Anderson, 1982; Steffensen, Joag-Dev, and Anderson, 1979). When subjects read text that is culturally familiar, they read it faster, remember more of it, and make fewer comprehension errors. Similarly, the purposes for which children read, how their interactions with text are shaped, and the settings in which they read are contextual factors that influence how they construct meaning (Bloome & Green, 1982; Cazden, 1985; Teale, 1986).

Expert as well as novice readers participate in this interactive process in which these three clusters of influence--reader, text, and context--converge to permit the construction of meaning. However, readers may operate at different levels of sophistication and may differ not only in the types of strategies they use but also in their awareness of what they are doing. In other words, all readers are predisposed to try to make sense of the texts we ask them to read, but some readers have better tools, can use the tools they have more adaptively and flexibly, and can apply those tools to more challenging texts.

Comprehension Strategies: Building a Curriculum

The evidence available suggests that low achievers do not get the same access to comprehension instruction and activities that is afforded higher achievers. At the same time, we have argued that what is presented to any and all students in our current curricula is not as thoughtful or helpful as it could be. It's like saying that the apple is rotten to begin with, and, to make matters worse, certain students don't even get their share of that rotten apple. What should be our curriculum for low-achieving students, or, for that matter, for all students?

To answer this question, we have expanded upon a recent effort by Pearson, Dole, Duffy, and Roehler (in press). They present six interrelated strategies they think should comprise the scope of classroom reading comprehension instruction. Their claim is that these strategies are derived from studies that have tried to document the nature of "expert" reading. The logic that guided their search is that one way of determining curricular goals is to learn what it is that characterizes the successful performance of experts.

Their choice of the term *strategies* as opposed to *skills* is a deliberate one. In their discussion, they note that the term *skills* is too closely tied to the hierarchical sequencing of commercial reading programs and, therefore, is associated with the repeated practice of isolated activities with small units of text. The term *strategy*, on the other hand, connotes a flexible plan that is under the conscious control of the reader. *Strategy* is associated with the reasoning processes readers use to make sense of text. It includes a metacognitive emphasis and reflects the adaptive nature of the comprehending process.

The goal of strategy implementation is to "set in motion the learning processes which lead to expert performance" (Resnick, 1984, p. 443). Pearson and his colleagues eschew the notion of scope and sequence because this type of organization does not give everyone equal access to the strategies that are needed for "expert" comprehension. What changes over time is *not* the sequencing or type of strategy presented, but the facility with which the readers employ these strategies and the type and sophistication of content to which they apply them. Children's progress will vary, but if they are to learn how to construct meaning from text, they need to be exposed to instruction that facilitates the interrelated development of comprehension strategies.

Six Strategies

The first strategy is *determining importance*. This strategy is more than finding the main idea, but it surely includes attempts to find main ideas. In addition to reader-determined importance (see Williams, 1986a, 1986b; Tierney & Cunningham, 1984; and Winograd & Bridge, 1986), the reader needs to derive from the text what the author must have considered important in setting pen to paper in the first place. To do this, the expert reader relies on general world knowledge and domain-specific knowledge, text structure knowledge, and knowledge of author biases, intention, and goals (see Afflerbach, 1986; Resnick, 1984; Winograd & Bridge, 1986).

In the classroom, an emphasis on determining importance would require that a teacher focus on more than asking students to locate the main idea of a paragraph. The latter emphasis typically concentrates

on text structure knowledge--how to use key words, phrases, graphics, summarizing statements, text organization, and other surface-level cues to determine what is important in the text. Teachers, as expert language users, should demonstrate the varied strategies and sources of information that they rely on to figure out what is important for them, as readers, to glean and remember from the text. Through a think-aloud procedure they might show students how they utilize general world knowledge, domain-specific knowledge, knowledge about the author's purposes, and text structure knowledge. This type of procedure moves students beyond a strictly "literal" interpretation of the text to one that requires them to think and reason about what they have read.

The second strategy is *synthesizing information* across large units of text to create summaries. This strategy is related to *determining importance* but goes beyond it in scope. The empirical work on summary training is quite encouraging. Working with students from middle school to college level, Brown and Day (1983; Brown, Day, & Jones, 1983) successfully have taught students to create text summaries by using five strategies: (a) deleting irrelevant information from a paragraph, (b) deleting redundant information from a paragraph, (c) creating a superordinate label for a list of things or actions, (d) locating topic sentences for paragraphs and knowing when it is appropriate to use them, and (e) creating topic sentences when none exist in order to "cover" a segment of the text.

While research has suggested that children's abilities to perform these summarizing operations may be developmentally linked (see Brown & Day, 1983), Palincsar and Brown (1984, 1986) have incorporated some of these operations into their successful reciprocal teaching approach with students who were accurate readers but poor comprehenders at the middle-school level. Their approach teaches students to apply four strategies to any text they read by (a) summarizing it, (b) asking a few questions that get at what is important in the text, (c) clarifying any parts of the text that prove difficult to understand, and (d) predicting what the author will talk about next. An important feature of their approach is that students are encouraged to share how they are constructing meaning from text. So, instead of just having the teacher as a model, the students begin to view each other as models.

Like so many other strategies that are intended to be highly adaptable, synthesizing may lend itself less to rules and decomposition and more to modeling and guided practice. Teachers can demonstrate how to synthesize by utilizing think-aloud demonstrations or by relying on the techniques like those used in reciprocal teaching.

The third strategy in the Pearson et al. scheme is *drawing inferences*. Even very young children can and do use their prior knowledge to make inferences about what they read (Kail, Chi, Ingram, & Danner, 1977). Instructional studies conducted by Pearson and his colleagues have demonstrated that children as young as second graders can benefit from teachers' guidance designed to improve their inferencing abilities (See Gordon & Pearson, 1983; Hansen, 1981; Hansen & Pearson, 1983; Pearson, 1985; and Raphael & Pearson, 1985).

In helping children to develop this strategy, teachers can begin by making them aware of many of the inferences they automatically make while reading. For instance, in the Kail et al. (1977) study, the children read sentences such as: "Mary was playing in a game. She was hit by a bat." The children had no difficulty in drawing the inference that Mary was playing baseball even though the game of baseball is not mentioned in the sentences.

Teachers can also demonstrate how to use clues from the text along with background knowledge to answer different types of inferential questions. G. Garcia's (1988) research with second-language children enrolled in fifth- and sixth-grade classrooms indicated that these children primarily relied on a literal interpretation of the text to answer inferential questions. If children are to learn from what they read, then they need to know how to answer textually explicit and implicit questions as well as scriptally implicit questions, which require the children to integrate background knowledge with information in the text (see Johnston, 1984, and Pearson & Johnson, 1978). Raphael's work on question-answer relationships (Raphael & Pearson, 1985; Raphael & Wonnacott, 1985) suggests that children benefit from instruction helping them to adapt question answering strategies to the demands of the questioning tasks they encounter.

The fourth comprehension strategy is *asking questions*. Not just teachers but students need to do this. Teacher-student discourse patterns in the American classroom consist primarily of teacher initiation-student response-teacher evaluation (TI-SR-TE) participant structures (see Mehan, 1979, and Cazden, 1988). Although this structure has dominated American classrooms for at least two decades (Guszak, 1967; Mehan, 1979; O'Flahavan, Hartman & Pearson, 1989), it does not allow the children to monitor and control their own comprehension. Despite limited research on this topic, there is both theoretical (Craik & Lockhart, 1972) and empirical (Andre & Anderson, 1978-79) support for question generation as a student-controlled strategy. The work of Singer and Donlan (1982) and Wittrock (1983) provides direct examples of ways to involve students in question generation. Additionally, question generation is an integral part of both the reciprocal teaching (Palincsar & Brown, 1986) and question-answer relationship activities mentioned earlier (Raphael, 1982, 1984).

The fifth strategy in the Pearson et al. scheme is *comprehension monitoring*. Expert readers are more careful in their construction of meaning than are novice readers (for summaries of this work, see Baker & Brown, 1984, or Garner, 1987). Expert readers not only tend to know how well their reading is progressing but they also alter their reading strategies to compensate for a problem once they realize one exists. Novice readers generally are less aware of the problems and are less able to compensate for them.

There is considerable evidence that all children can develop comprehension monitoring ability. Miscue research (see K. Goodman, 1968, 1976, 1978), in particular, has demonstrated that all readers, including novice readers, try to make sense of the text as they read aloud (see Y. Goodman, 1971 and Hudelson, 1981). Initial findings from the implementation of the Reading Recovery program also have demonstrated that with extensive tutoring, first-grade students in the bottom 10% of the achievement distribution can learn to monitor reading for meaning (see Boehnlein, 1987; Clay, 1987; and Columbus Public Schools, 1987).

Classroom teachers can help students develop comprehension-monitoring expertise. Young children should be encouraged to speak up when something does not make sense to them, whether they are listening to it or reading it. Older children need to understand why comprehension may go awry. By emphasizing how they, their teachers, and their classmates construct meaning from text, children enhance their metacognitive awareness and improve their own comprehension monitoring. To develop these competencies, teachers and students must go beyond correct answers given in a text or a workbook to discuss, in an environment of mutual respect, how different individuals arrived at different answers or interpretations.

We have included Pearson et al.'s notion of *adapting resources* as our sixth strategy. It is a logical successor to their fifth strategy, *comprehension monitoring*. Once a comprehension failure is detected, something can be done to repair it. There is considerable research supporting this kind of fix-up strategy. For example, expert readers tend to know when and how to study difficult text for longer times than do novice readers (see Masur, McIntyre, & Flavell, 1973, and Owings, Peterson, Bransford, Morris, & Stein, 1980). Expert readers also are more likely to look back at the text to resolve a problem than are novice readers (Alessi, Anderson, & Goetz, 1979; Garner, 1987). Finally, expert readers utilize a more varied repertoire of strategies to answer questions about the text than do novice readers (Raphael & Pearson, 1985).

Garner (1987), in particular, describes classic fix-up strategies that distinguish the expert from the novice reader. Students need to understand that there are times when the reader needs to speed up, slow down, look back, reread, skim, predict, generalize, or even resort to a dictionary. Somehow our instructional activities tend to breed a surface processing attitude among students. Too many students are interested in getting through the text at the expense of understanding it.

Common Features

Central to all these strategies is the importance of activating students' prior knowledge, or schemata, and providing students with a comfortable context, or instructional environment, in which to develop these strategies. Schemata refer to the organizing frameworks within the mind that the reader uses to identify and integrate new information with previously learned information (Anderson, Spiro, & Anderson,

1978). The activation of this process is at the heart of comprehension and inherent in all of the strategies presented. Without the activation of prior knowledge, it would be difficult for readers to determine what is important in text, to draw inferences, or to monitor comprehension.

Expert readers are more adept at using their prior knowledge to help them make sense of text than are novice readers (among others, see Bransford, Stein & Vye, 1982; Gordon & Pearson, 1983; Hansen, 1981; Hansen & Pearson, 1983; Pearson, Hansen, & Gordon, 1979). On the other hand, there is some evidence that novice readers can be taught how to use and alter their prior knowledge, improving their text comprehension (see Dole & Smith, 1987, and Roth, 1985). To learn how to use their knowledge to monitor and improve comprehension, all students, including those labeled "at-risk" or "disadvantaged," need to be given the opportunity to read both familiar and unfamiliar text. Content analyses of basal reading series suggest that these series, in and of themselves, do not contain enough material that reflects the cultural and background experiences of minority children (Butterfield, Demos, Grant, May, & Perez, 1979; Logan & Garcia, 1983). If these children are to become proficient readers, then they need to read text that allows them to integrate new knowledge with current knowledge.

One of the few comprehension-based instructional programs that has been developed specifically for language-minority children is that of the Kamehameha Early Education Program (KEEP) in Hawaii (Au, 1981; Au & Mason, 1981; Cazden, 1988; Tharp, 1982). KEEP is a reading program specifically designed for Hawaiian children of Polynesian descent. Based on current reading comprehension research, the program emphasizes students' discussion of what they already know about a topic before they read it; silent reading of the text to answer specific questions; and subsequent discussion that integrates the students' experiences with what they have read. In addition, the program recognizes that the social context in which the children learn to read also is important. Students are not constrained by the TI-SR-TE discourse pattern of interaction. Instead, they have been allowed to use a discourse pattern, termed "talk story," that approximates the type of verbal interaction to which they are more accustomed at home and in their speech community. Although educators interested in cultural differences have warned against overgeneralizing the success of individual programs and have pointed out the dangers of stereotyping (Cazden & Mehan, 1989), it does appear that awareness of cultural differences is important in the organization and development of literacy instruction. Nevertheless, the extent to which programs have been developed based on this awareness still is very limited and continues to be controversial. Heath's (1982) study of children from a black Southeastern community and Philips' (1983) study of Native-American children from the Warm Springs Indian Reservation demonstrated that these particular children also were accustomed to different participant structures than those used in the mainstream classroom. Similar to the KEEP findings (Au, 1981), Heath reported considerable success when teachers adapted classroom literacy instruction to the type of participant structures with which the particular children were more comfortable.

The curriculum proposed by Pearson et al. (in press) emphasizes strategies rather than skills, includes a clear metacognitive focus, entails prior knowledge activation and utilization throughout the strategies, and recognizes the influence that the classroom environment has on children's literacy development. Although this curriculum has not been tested in the classroom, we think that it is past time for it to be considered.

Helping Students Acquire Effective Strategies: The Question of Instruction

Clearly, it is not enough to have a curriculum comprised of excellent strategies; we also need a plan for helping students acquire those strategies (or, if you prefer, a plan for helping teachers teach those strategies). So we turn now to the issue of instruction: How shall we help students acquire the strategies they need in order to be active, strategic readers?

To review the instructional candidates available, we refer to a recent conceptualization by Pearson and Raphael (in press). Based upon a review of research and rhetoric, they identify four models as candidate delivery systems--direct instruction, explicit instruction, cognitive apprenticeships, and whole language. They view these four models as forming a continuum, where direct instruction is at the more curriculum-centered end, involving a high level of teacher control, and whole language is at the more child-centered end, involving a low level of teacher control. Discussion of these models has been marred

by polemics; hence the inherent differences between them have been emphasized at the expense of any discussion of their similarities.

Direct Instruction

Gersten & Carnine (1986) have reviewed the comprehension research conducted within this paradigm. They present a host of skills and strategies that they feel are better learned in a direct instruction setting than in settings in which skills are merely practiced on their own by students, and errors are simply acknowledged by the teacher, a situation described and critiqued by Durkin (1978-79). Two underlying assumptions of direct instruction are that teachers need precise guidance in teaching reading comprehension and that principles of instructional design can be used to structure this type of instruction.

The basic position of direct instruction is that children seldom learn what we do not teach them directly. Left to their own devices--without benefit of step-by-step instruction, step mastery, guided practice, and extensive feedback--they are likely to develop maladaptive strategies. Hence, instruction must be well planned, deftly executed, and extensively supported with much guided practice, independent practice, feedback, and assessment. A common characteristic of direct instruction (whether intentional or artifactual) is the breakdown of strategies into smaller, more easily trackable subskills to accommodate the inherent complexity of reading.

Explicit Instruction

Pearson and his colleagues (Pearson & Dole, 1987; Pearson & Gallagher, 1983) use the term explicit instruction to distinguish their position from the direct instruction view. Duffy and Roehler and their colleagues (1987) have a similar construct, labeled explicit explanation. The basic differences between the direct instruction position and the explicit instruction position lie in task conceptualization and control over the learning environment. Neither Pearson nor Duffy sees any need to decompose skills into subskills. Indeed, because they see so much conceptual overlap among comprehension skills (finding main ideas often entails both drawing inferences and determining cause-effect relationships simultaneously), they find both theoretical merit and practical benefit (time-savings) to more holistic strategies. They also require that skill application occur with authentic texts (i.e., naturally occurring) instead of skill-driven texts (i.e., written specifically to facilitate skill application).

Control, in the explicit view, is more of a shared responsibility than a teacher responsibility (see Pearson & Dole, 1987, or Pearson, Dole, Duffy, & Roehler, in press, for a complete discussion). Teachers may begin an instructional cycle by accepting major responsibility for skill application; however, they soon release responsibility to students. The notion of "gradual release of responsibility" is central to their view (Pearson & Gallagher, 1983).

While they raise many unanswered questions about this paradigm, Pearson and his colleagues cite supportive research to establish the efficacy of the explicit instruction position. They include the questioning work of Raphael and her colleagues (e.g., Raphael & Pearson, 1985; Raphael & Wonnacott, 1985), the metacognitive training studies of Paris (see Paris, 1984), the comprehension skill work of Baumann (1984), and the explicit explanation work of the Michigan State group (Duffy, Roehler, Sivan, Rackliffe, Book, Meloth, Vavrus, Wesselman, Putnam, & Bassiri, 1987). They use the four facets of skill development suggested by Paris, Lipson, and Wixson (1983): What (what the skill is), How (how to perform it), When (when to apply it) and Why (why one would ever use it in the first place). Most convincing in this tradition is the research of Duffy and his colleagues. They have documented a positive relationship between the degree to which teachers are explicit about explaining the what, how, when, and why, and the degree to which students acquire and use comprehension strategies.

Components in an explicit instructional routine include teacher modeling (making public the secrets of invisible processing), guided practice (a kind of learning-through-problem-solving segment), independent practice (students do it on their own), consolidation (public review to see if students can handle it with minimal guidance), and application (using it with regular texts). Strategies need not be decomposed to reduce complexity; complexity is better handled, they suggest, by scaffolding, providing extra support when students experience difficulty doing it on their own. That is, in essence, what the construct of

gradual release of responsibility (see Pearson & Gallagher, 1983) is for. A teacher slides up and down that continuum as necessary, providing precisely the amount of scaffolding necessary to support student success.

Scaffolding is a term borrowed from Bruner (Wood, Bruner, & Ross, 1976) and Vygotsky (1962) to characterize learning in social situations. The metaphor of the scaffold is apt because the teacher support, like a scaffold, is temporary and adjustable. While it can be used to explain the teacher's role in explicit instruction, it is even more commonly associated with the cognitive apprenticeship model.

Cognitive Apprenticeships

Further along the continuum is the cognitive apprenticeship model (see Collins, Brown, & Newman, 1989, and Brown, Collins, & Duguid, 1989). Collins and his colleagues discuss the difficulty of teaching complex cognitive processes that basically are invisible. They suggest that reading, writing, and mathematics are not easily learned through the learning-as-the-transmission-of-knowledge model of Western civilization. Instead, they contend that such activities are more easily learned through an apprenticeship model similar to that which historically characterized all instruction and which still characterizes entry into certain crafts and professions.

Similar to craft apprenticeships, the cognitive apprenticeship model is based on an expert--in this case, the teacher--helping novices of different abilities acquire expertise by first observing what the expert does and then trying it out under the expert's tutelage. Key components of the approach include modeling, coaching, and fading. Pearson and Raphael (in press) point out that these three elements are similar to the modeling, guided practice, consolidation, and gradual release of responsibility that characterize explicit instruction. Unlike the latter, however, the cognitive apprenticeship model emphasizes the importance of always presenting instruction within the context of higher order problem-solving activities that are genuine and authentic as opposed to activities that are developed solely to permit skill or strategy practice. Pearson and Raphael point out that a major advantage of this type of situated learning is that the issue of transfer is eliminated; students develop a repertoire of reading strategies as a means to completing functional and meaningful problem-solving activities.

Sequencing within the cognitive apprenticeship model involves two principles: (1) presenting global skills before local skills, and (2) completing activities in increasingly diverse and complex contexts. At every level of complexity, scaffolding--not subskill decomposition and sequencing--is the mechanism that helps students cope with complexity. Diversity, meeting the same task in new problems and new situations, should also increase over time so that students are able to acquire a "richer set of contextual associations" for the task. Although aspects of cognitive apprenticeship are reflected in a few reading (Palincsar & Brown, 1984), writing (Scardamalia & Bereiter, 1983), and mathematics (Schoenfield, 1983) programs, none of these provide a direct test of its efficacy.

Whole Language

In a relatively short period of time the whole language movement has had an incredible impact on the field of reading. Based on first-language acquisition theory, advocates of the movement consider literacy development to be an interrelated facet of language development (see K. Goodman, 1986, and Altwerger, Edelsky, & Flores, 1987, for details about this movement). Children acquire literacy in the same way that they acquire oral language--naturally and over time through extensive and varied exposure to authentic literacy tasks. Children's emerging expertise and control over literacy tasks are viewed as a natural extension of their language development. Listening, speaking, reading, and writing are considered interrelated aspects of language development. There is no reason for one aspect of language development to be emphasized prior to the development of another. For this reason, separate instruction in reading or language arts does not occur in whole language classrooms. Phonics instruction and basal readers are eschewed in favor of exposure to literacy events that have real functions and that may involve all four aspects of language development. With the emphasis on functional and real literacy tasks, there is no need to read materials that have been especially developed to practice or learn skills or subskills.

Whole language specifically differs from the cognitive apprenticeship position in its definition of the teacher's role. In whole language, the teacher is the facilitator but not the expert; whereas, in the cognitive apprenticeship model, the teacher is the expert, or the master craftsperson, while the children are the novices or apprentices. The whole language literature implies that the students and not the teacher define the tasks to be undertaken as well as the materials to be read. The teacher's role is to provide a supportive classroom setting where children are encouraged to define what they want to read and write. All tasks must be functional and authentic, including the purposes for completing tasks, the content of what is read or written and the audience for whom the communication is intended. Teachers should not tell anyone what to do or when to do it. While they may share their interpretation of text, or explain the use of standard conventions, such as spelling or punctuation, they are not supposed to impose these standards on their students as evaluative criteria.

Pearson and Raphael (in press) point out that the limited research base behind whole language has hindered its evaluation as a complete instructional approach. Part of the problem is that whole language proponents tend to be critical of standardized tests and quantitative experimental research (Edelsky & Harman, 1988; K. Goodman, 1986). As a result, they generally avoid using either of them to evaluate whole language programs. To what degree whole language is effective at the different levels of schooling is not known, at least not from the "conventional" perspective that many educators are accustomed to in evaluative research. Neither is it known to what extent the whole language approach can provide *all* children with the literacy development that they need to succeed in American schools (see Delpit, 1986, 1988, for a discussion of this issue).

What is known, however, is that some features of the whole language model have been positively associated with other successful instructional approaches. Pearson and Raphael review these features and specifically note that there is considerable evidence to indicate that reading literature results in better reading comprehension than does isolated skill practice (Anderson, Hiebert, Scott, & Wilkinson, 1985; R. Anderson, Wilson, & Fielding, 1988; Taylor, & Frye, 1987). Similarly, children's knowledge about letter-sound correspondences is enhanced when they are allowed to use invented spelling (i.e., spell words on their own when they are unsure of the correct spelling) (see Clarke, 1986). Also, the quality and quantity of children's writing are improved when they are encouraged to participate in wide-ranging, unfettered writing activities from the outset of schooling (Calkins, 1983, 1986; Graves, 1983). In addition, the reliance on authentic, functional literacy tasks helps students to develop a more realistic view of the uses of reading and writing (Garcia, Flores, Prieto, & Moll, 1987; Freire, 1983).

It also may be that the whole language approach reduces the cultural mismatch that frequently occurs in classrooms where linguistic- or cultural-minority children are in attendance because the students and not the teacher define the context of the learning situation (for a discussion of this mismatch, see Au & Mason, 1981; Heath, 1982; and Philips, 1983). This, along with the early emphasis on print awareness in the formal school setting, may be what helps to enhance the initial literacy acquisition of some linguistic- and cultural-minority children.

Choosing the Best Alternative

We began our review of instructional models with the clear intention of selecting, on the basis of the review, one of the four as the best alternative for children who have been labeled "at-risk" or "disadvantaged." However, the review has led us to a change of heart. First, we must confess that we really do not know the long-term effects of any of the programs on the reading comprehension of such children. Second, we are not sure that any of them, in and of themselves, provides the appropriate delivery system for the comprehension focus that we are advocating. Rather than select one of the models as clearly superior to the others, what we want to do is to identify features of each model that we think are especially appropriate for designing instruction for low-achieving students. In short, we will build our own consensus model of instruction. In doing so, we will parallel what good teachers do on a yearly, weekly, and daily basis--compile an "eclectic" model of instruction from available resources.

The first feature in our consensus model is *teacher modeling*. Teachers can and should show students how they perform the tasks they ask students to perform. Interestingly, modeling as an instructional feature does not allow us to discriminate among our four models because it is an integral part of each. Even whole language advocates support the practice, although they tend to prefer the term

demonstration (Smith, 1984), and they require that only authentic, whole processes be demonstrated. One reason that modeling or demonstration is so important to good instruction is that comprehension processes are so hard to talk about in the abstract (in the sense of rules or steps) that one almost has to "see it to believe it." What is especially helpful are "reflective" demonstrations--demonstrations in which the modeler talks the students through the processes involved in his or her performance (what Paris, 1984, calls "making thinking public."). Like so many domains of inquiry in which knowledge is "ill-structured," it is easier and more instructive to present cases (examples of the process in action) than it is to deal with rules or guidelines (see Spiro, Coulson, Feltovitch, & Anderson, 1988, for a complete treatment of learning in ill-structured domains of knowledge). The first principle in our consensus model reads like this:

> Because reading comprehension is an ill-structured knowledge domain, it is more appropriate to provide students with demonstrations of how strategies are applied in real reading situations than it is to offer them either abstract sets of rules or multiple opportunities to practice the strategies. At the very least, rules and or practice opportunities ought to be accompanied by reflective demonstrations.

A second feature in our consensus model is *authenticity*. Authenticity is the essence of the whole language model. It would be an unspeakable act to ask a child to read an unauthentic text or to perform an unauthentic task (see Edelsky & Draper, in press, and Edelsky & Harman, 1988). Authenticity is an ultimate goal of the direct instruction model (direct instruction advocates do want students to apply what they have learned to real texts read primarily for purposes of comprehension, but they tolerate a lot of special texts during instruction), a required part of the explicit instruction model (but special texts are tolerated for demonstration purposes), and an implicit requirement of cognitive apprenticeships (there is no need to apprentice a student reader to a fake text or task when there are plenty of authentic ones lying around). Our particular version of the authenticity principle goes like this:

> Strategy instruction should occur within the context of trying to comprehend a particular text written by an author for the purpose of communicating a message (informational, entertaining) of some sort to an audience. For purposes of demonstrating or highlighting a particular feature of the strategy, it may be permissible to remove a text segment from its surrounding context (a teacher could put a paragraph on the overhead, for example, but make it a real paragraph from a real text), but both the strategy and the text segment should be immediately recontextualized.

The third feature in our consensus model focuses on the issue of *reducing complexity* during strategy acquisition. Essentially, education has adopted two principles for reducing complexity: task decomposition and scaffolding. We want to establish our position clearly on the side of scaffolding. Task decomposition, a critical feature of direct instruction, has had its "day in court" for the past thirty years. It is time, we think, to give equal time to scaffolding as an alternative strategy for coping with complexity. What we are saying is that our instructional practice of decomposing tasks and removing them from natural contexts in order to highlight critical features has not proven all that successful, especially for low-achieving students. It may be better to have students perform the task in contexts that are as close as possible to the situation in which they will ultimately have to apply it and, in that process, to provide them with support as they struggle through it. In summary, here is our principle:

> To help novices cope with the intrinsic complexity of reading tasks, it is better to provide extensive scaffolding for authentic tasks than it is to decompose and decontextualize those same tasks.

The fourth feature of our consensus model is an intrinsic bias toward *student control* of the instructional situation. We do not take quite the radical position advocated by whole language devotees, who would claim that students should always be in charge of their own learning (selecting texts to read and topics for writing), but we do think control by "others" is too dominant in our current situation. Currently someone else--be it a teacher, an administrator, or a basal author--decides what gets taught when, what gets practiced when, and what the criteria for success and failure are; students have to rely on feedback from others to let them know whether they are becoming literate individuals. Everything we know about the importance of metacognitive control of cognitive processes and everything we know about intrinsic

motivation demand that we let students participate in the planning and evaluation of the curriculum to which we subject them. The ultimate goal of teacher assessment should be student self-assessment; the ultimate goal of teacher planning should be to help students learn how to plan their own learning. These goals can only be accomplished in an atmosphere of shared responsibility for curricular decision making. The concept of gradual release of responsibility, applied so assiduously to task completion by the explicit instruction advocates, should be expanded to both the planning and assessment aspects of literacy curricula. Our principle reads like this:

> From the earliest stages of the school literacy curriculum, students of all achievement levels should be involved in planning reading and writing activities and in evaluating their own performance. With additional experience and expertise, students should take additional responsibility for planning and evaluating their own learning.

These are the four features of our consensus model--teacher modeling (to let students in on the secrets), task and text authenticity (to ensure purposefulness), scaffolding (to cope with complexity), and shared decision-making responsibility (to develop self-assessment skill). Looking back upon our four candidate models, one might conclude that we borrowed very little from the direct instruction tradition and a lot from whole language. But we see components from all these models, although we must admit that our consensus principles are more consistent with a liberal version of explicit instruction and cognitive apprenticeship and a conservative version of whole language than they are with direct instruction. Nevertheless, direct instruction advocates would surely claim our emphasis on modeling and feedback as theirs, just as whole language patrons would consider authenticity and student control as theirs. Our emphasis on scaffolding would be applauded by advocates of cognitive apprenticeship and explicit instruction. On the other hand, we permit more deviation from principles of authenticity and shared decision making than we think advocates of whole language would like; conversely, we demand greater adherence to those same principles than explicit instruction advocates would demand (they would view them more as ultimate goals to work toward than as day-to-day operational tools).

A Final Word

Clearly our approach requires teachers to move away from the "teacher-proof" model frequently offered in conventional programs to a model in which they make most decisions within their classrooms. Along with this independence comes considerable responsibility and commitment. For our approach to work, teachers must see themselves as readers and writers and be willing to widen their knowledge base about reading and writing. They must also understand that the development of literate individuals in school requires that literacy instruction be extended beyond the reading and language arts classes to include all domains of inquiry. And finally, if this process is to involve those groups of children who traditionally have been called "at-risk" or "disadvantaged," teachers need to be aware of and willing to accommodate the different language and literacy experiences that their students bring to the classroom. For literacy to flourish, all participants must share in its ownership.

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